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Ersbøll, Bjarne Kjær

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Revising an OECD Test Guideline on toxicity in aquatic environments

Bjarne Kjær Ersbøll*[1]

1: DTU Compute

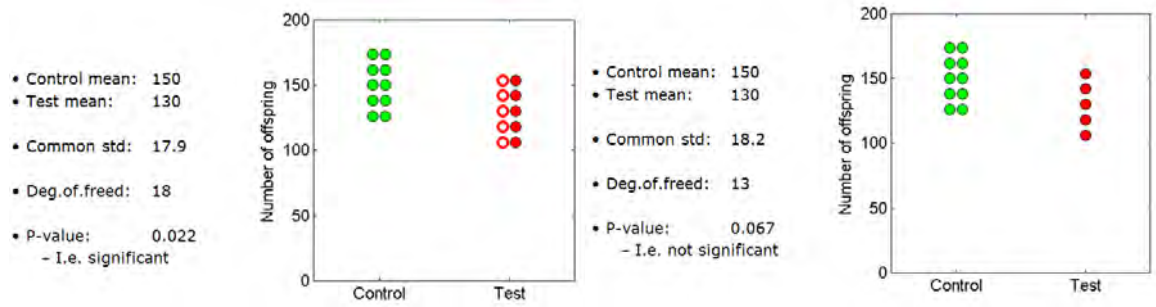
*Corresponding author email: bker@dtu.dk

Numerous Test Guidelines for different types of toxicity tests exist. The idea behind such a guideline is to provide a fairly rigorous procedure on how to design, perform, collect data, perform the statistical analysis, and finally to report on the results. Such guidelines are often a compromise in order to make the statistics easy to understand.

Guidelines are usually developed over time, other designs may be developed, new end-points may be defined, other types of statistics may be preferred, etc.

Here we present some of the experience gained in trying to adapt statistics to environmental policies by trying to provide argumentation for introducing alternative methods for the statistical analysis.

The "TG211 *Daphnia magna* Reproduction Test" refers to one of the internationally most commonly used test standards for assessing chemical toxicity in aquatic environments. We have assisted the OECD in updating and negotiating the standard by adjusting the statistical methodology and interpretation hereof to match current practice. Many different stakeholders (e.g. governmental bodies, environmental agencies, industry) have a say before such an update can be rectified. It has therefor been of utmost importance that we carefully and pedagogically were able to communicate why the proposed changes were sensible.



Figur 1 Adults die shortly before end of experiment - and are retained to the left but removed to the right. This seemingly simple decision has drastic consequences for the outcome of the toxicity test.

Reference:

OECD (2012), *Test No. 211: Daphnia magna Reproduction Test*, OECD Guidelines for the Testing of Chemicals, Section 2, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/9789264185203-en